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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,515	04/19/2004	Hiroshi Ohishi	52433/754	3475

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EXAMINER

FIGUEROA, JOHN J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/827,515	Applicant(s) OHISHI ET AL.	
	Examiner John J. Figueroa	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 14-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 14-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/555,199.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>April 19, 2004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/555,199 filed on June 27,2000.

Information Disclosure Statement

2. The information disclosure statement filed April 19, 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. No Abstract or explanation in English was provided for the Japanese Patent references listed on the IDS that were crossed out by the Examiner.

Accordingly, the information referred to therein of these references in the Japanese language has not been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention. The phrase "sphere equivalent diameter" is vague and confusing. The specification does not provide guidance as to whether Applicant is actually referring to the particle size, radius or, alternatively, the diameter of the particle.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 14-21 and 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent Number (USPN) 5,237,004 to Wu et al., hereinafter 'Wu'.

Wu discloses a polymer composition comprising a matrix polymer and spherical shell/core phase polymeric particles of a diameter (preferably, between about 2-15 μ m) having a polymeric core phase and a polymeric shell phase of one or more shells (encapsulating the core phase); said core phase containing a vinyl polymer that can be a rubbery or glassy (crystalline) polymer formed from monomers of vinyl aromatic monomers, such as styrene, or diolefins, such as butadiene and/or isoprene; said shell phase containing a polymer compatible with the matrix polymer; wherein said shell preferably comprise about 5 to about 40% of the weight of the core/shell particles; and wherein said spherical particles comprise 0.1 to 10% of the total polymer composition

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weight. (Abstract; col. 3, lines 16-53; col. 6, line 68 to col. 7, line 25; col. 8, lines 43-47; col. 13, line 67 to col. 14, line 23)

Wu discloses that polymers suitable for the shell phase are poly(methyl) methacrylate, polyvinyl chloride, styrene, acrylonitrile, ethyl acrylate or a compatible copolymerized combination, whereas the core polymer can be any polymer compatible with the matrix polymer, such as a rubbery vinyl polymer formed from a diolefin, alkyl acrylate (e.g. butyl acrylate), styrene, alkyl styrene and/or arene monomer. (Col. 7, lines 4-14 and 25-56; col. 8, lines 46-65; col. 15, lines 13-41; *See, particularly*, Example 4 on col. 20, disclosing ethyl acrylate as a monomer for the outer shell; Example 6-8 for an outer shell of styrene/butyl acrylate) The matrix polymer can be, e.g., polyalkylene terephthalate, such as PET, or poly(cyclohexanedimethanol terephthalate). (Col. 10, line 36 to col. 11, line 27; col. 13, lines 32-37)

Wu further discloses that the polymer composition can be formed by melt blending (col. 12, lines 61-66; col. 13, lines 31) and that various polymers can be used as plasticizers, such as poly(vinyl acetate), PVC, plasticized cellulosic esters to soften a polymer (col. 10, line 67 to col. 11, line 2; Examples 180-184). In Examples 145-147 on col. 32-33, Wu discloses forming a sheet (film) from a polymer composition comprising ethyl acrylate as an outer shell monomer. Wu also discloses that a pigment may be added to the composition. (Col. 18, line 65 to col. 19, line 7)

Although Wu does not specifically discloses the intrinsic viscosity for the polyester matrix component of the resin film composition, because Wu's resin sheet encompass the same compositions as that recited in the instant claims, the both Wu's

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resin sheet and claimed resin film must inherently possess the same physical properties for their respective compositions, such as intrinsic viscosity and glass transition temperature.

Moreover, although Wu discloses the diameter of the shell/core particle is *preferably* from about 2 to 15 μ m (col. 9, lines 9, lines 3-9), Wu does not specifically disclose the "sphere equivalent diameter" of the core component of the particle. However, in col. 9, lines 14-17, Wu discloses that, if desired, spherical particles having a particle size of 1 μ m in diameter can be produced using emulsion techniques. Thus, if the entire particle has a diameter of 1 μ m, then the size of the core polymer must be less than 1 μ m.

Thus, the claims are anticipated by Wu.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 14-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu in view of USPN 4,219,628 to Weemes et al., hereinafter Weemes.

Wu was discussed above. Wu does not explicitly disclose the core polymer being formed from a polyolefin resin that is a copolymer of ethylene and an alpha-olefin of three or more carbons or the shell core containing an ionomer resin. (Claims 21-24)

However, Weemes teaches that adding a combination of an ionomer polymer and a polyolefin rubber to a polyester composition provide a balance of properties more suitable for molding purposes, such superior impact resistance, while retaining a high level of tensile strength and flexural properties. (Abstract; col. 2, lines 31-40; col. 5, line 9 to col. 6, line 10; col. 7, lines 1-43) Among the suitable combinations Weemes teaches that can be added to the polyester combination are blends of poly(ethylene-co-propylene) rubber and an ionomer of poly(ethylene-co-acrylic acid). (Abstract; Examples 1-3; Tables 1-3) Moreover, Weemes teaches that the intrinsic viscosity of the polyester could range from about 0.6 to 1.5. (Col. 8, lines 16-36)

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time that the invention was made, to incorporate a blend of an ionomer and ethylene copolymer into the polyester composition used to form Wu's resin film. It would have been obvious to one of ordinary skill in the art to do so to incorporate Weemes' teachings and attain an enhanced resin film having superior impact resistance while yet still retaining a high level of tensile strength and flexural properties.

Thus, the claims are unpatentable over Wu and Weemes.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

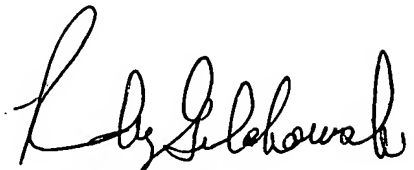
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Mon-Thurs & alt. Fri 8:00-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJF/RAG



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